

ARTHUR R. MARSHALL LOXAHATCHEE NATIONAL WILDLIFE REFUGE

SUMMARY

MAP

Phosphorus Concentrations

The Settlement Agreement entered into by the federal government, the State of Florida and the South Florida Water Management District in 1991 to end the Everglades lawsuit stipulates interim and long-term phosphorus concentration levels for the Loxahatchee National Wildlife Refuge (Refuge). The interim and long-term concentration levels must be met by Feb. 1, 1999, and Dec. 31, 2006, respectively. The concentration levels vary monthly because they are calculated as a function of water level measured at gaging stations 1-7, 1-8C and 1-9 within the Refuge. Total phosphorus concentrations are determined from water samples collected at the 14 interior marsh stations (LOX 3 through LOX 16) shown on the map.

Average stages in the Refuge were 17.49, 17.01 and 16.55 feet in October, November and December, respectively (**Figure 25**). The geometric means calculated from total phosphorus concentrations measured in water samples collected in October, November and December were 8.8, 7.5 and 6.0 ppb, respectively. The geometric mean concentration in October exceeded the calculated interim and long-term limits of 8.3 and 7.2 ppb, respectively (**Figure 25**). In November and December the geometric mean concentrations were lower than the interim and long-term limits (**Table 6**).

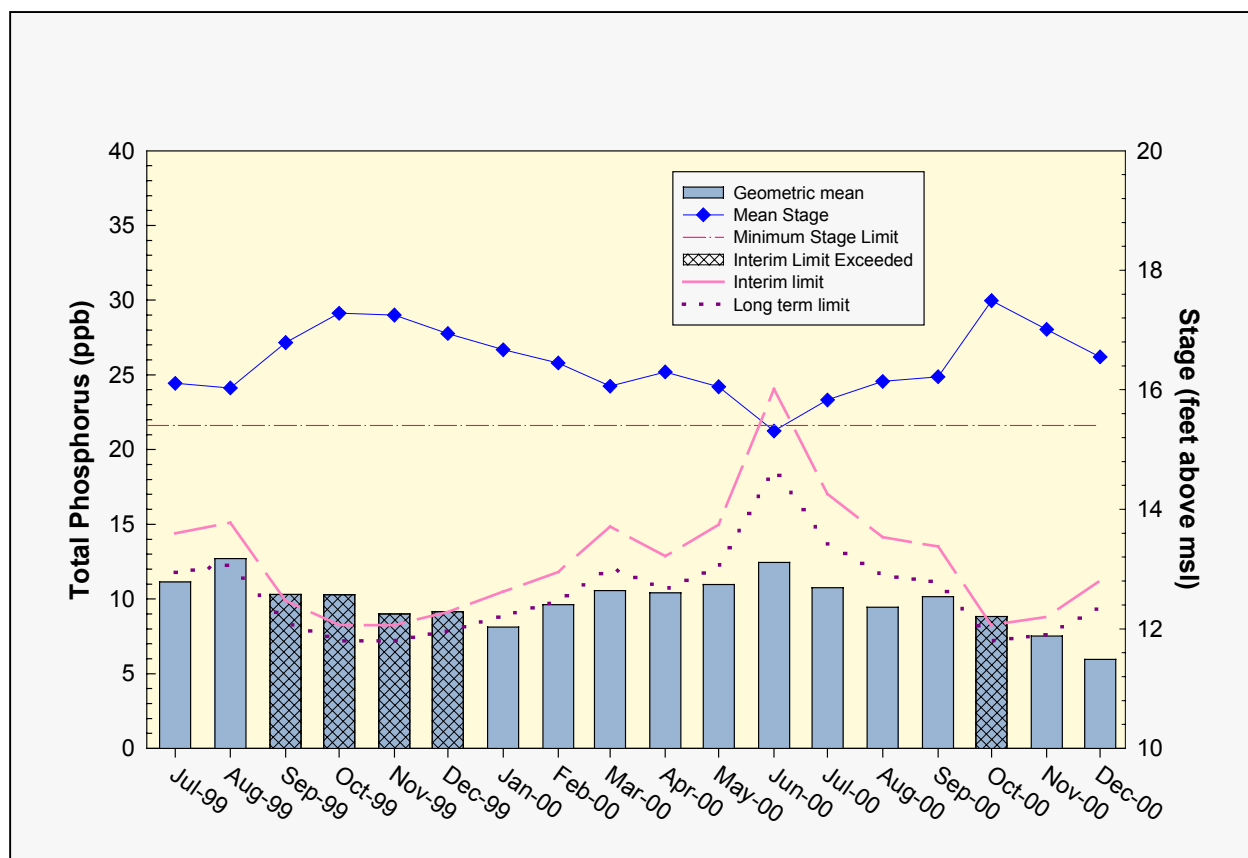


Figure 25. Monthly total phosphorus geometric mean concentration levels for the Loxahatchee National Wildlife Refuge compared to the interim and long-term targets. The calculated target concentrations are adjusted for fluctuations in water level.

Table 6. Loxahatchee National Wildlife Refuge Total Phosphorus Compliance.

Month and Year	Geometric Mean	Interim Limit	Long Term Limit	Average Stage	Number of Phosphorus Samples	Number of Stage Measurements
	(ppb)			(ft, NGVD)		
Jan-1999	6.9	8.8	7.6	17.02	14	3
Feb-1999	6.8	10.8	9.1	16.62	11	3
Mar-1999	9.1	14.1	11.6	16.14	9	3
Apr-1999	11.9	N/A	N/A	15.35	3	3
May-1999	16.4	N/A	N/A	15.20	2	3
Jun-1999	14.2	11.7	9.8	16.47	13	3
Jul-1999	11.1	14.4	11.8	16.11	10	3
Aug-1999	12.7	15.1	12.3	16.03	8	3
Sep-1999	10.3	9.9	8.4	16.79	14	3
Oct-1999	10.3	8.3	7.2	17.28	14	3
Nov-1999	9.0	8.3	7.2	17.25	14	3
Dec-1999	9.1	9.1	7.9	16.94	14	3
Jan-2000	8.1	10.5	8.9	16.67	14	3
Feb-2000	9.6	11.8	9.9	16.45	13	3
Mar-2000	10.6	14.8	12.1	16.06	12	3
Apr-2000	10.4	12.9	10.6	16.30	14	3
May-2000	9.3 (11.0)	14.6 (15.0)	11.9 (12.2)	16.09 (16.05)	11 (14, 11, 13, 12)	3 (3, 3, 3, 3)
Jun-2000	12.4	N/A	N/A	15.31	6	3
Jul-2000	10.8	17.0	13.7	15.83	6	3
Aug-2000	9.4	14.1	11.6	16.14	10	3
Sep-2000	10.2	13.5	11.1	16.22	11	3
Oct-2000	8.8	8.3	7.2	17.49	13	3
Nov-2000	7.5	8.8	7.6	17.01	14	3
Dec-2000	6.0	11.2	9.4	16.55	9	3

Notes:

- (1) Average Stage is calculated using stage elevations at three stations on the sampling date.
- (2) The italicized values in parentheses for May-2000 include the Lake Okeechobee Recession special sampling data.
- (3) Highlighted values indicate months when exceedances occurred.